

Fig. 1

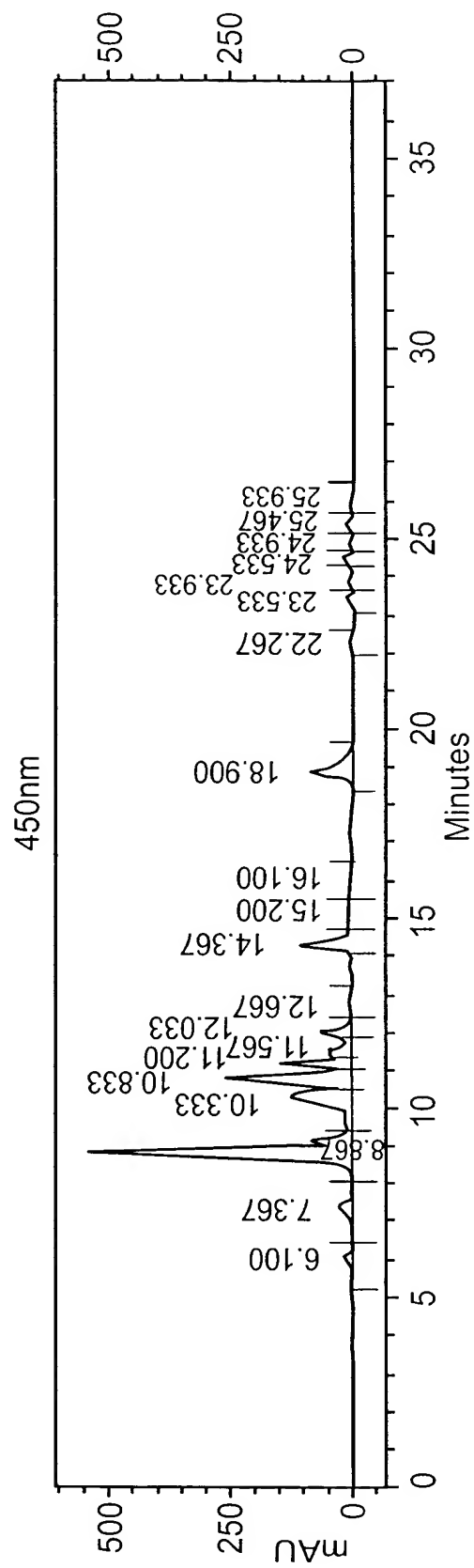


Fig. 2

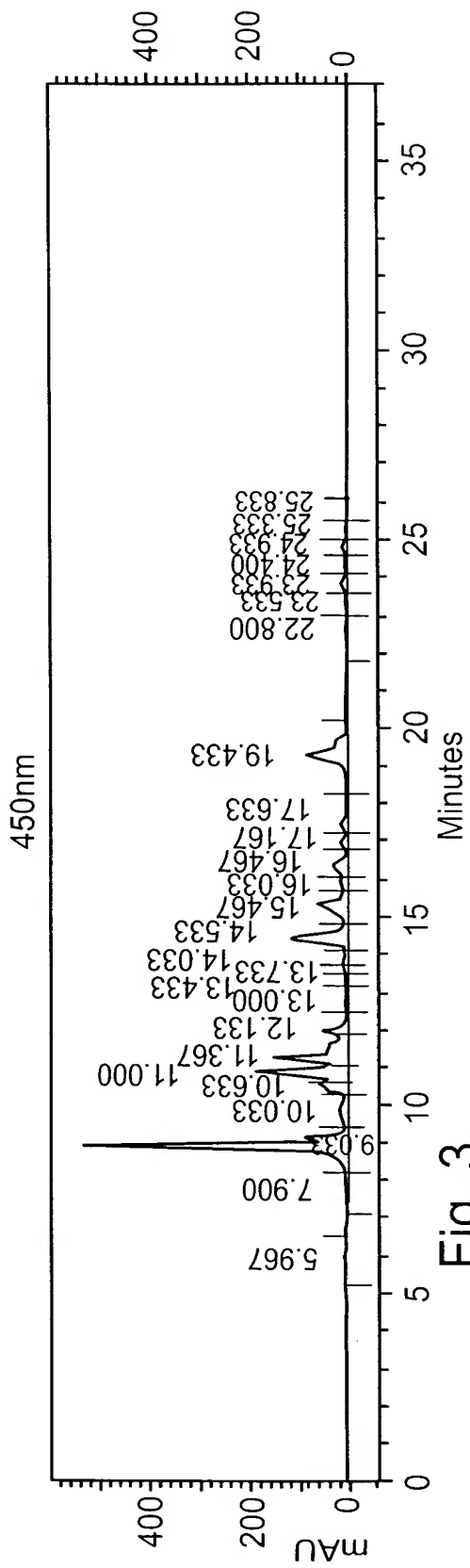


Fig. 3

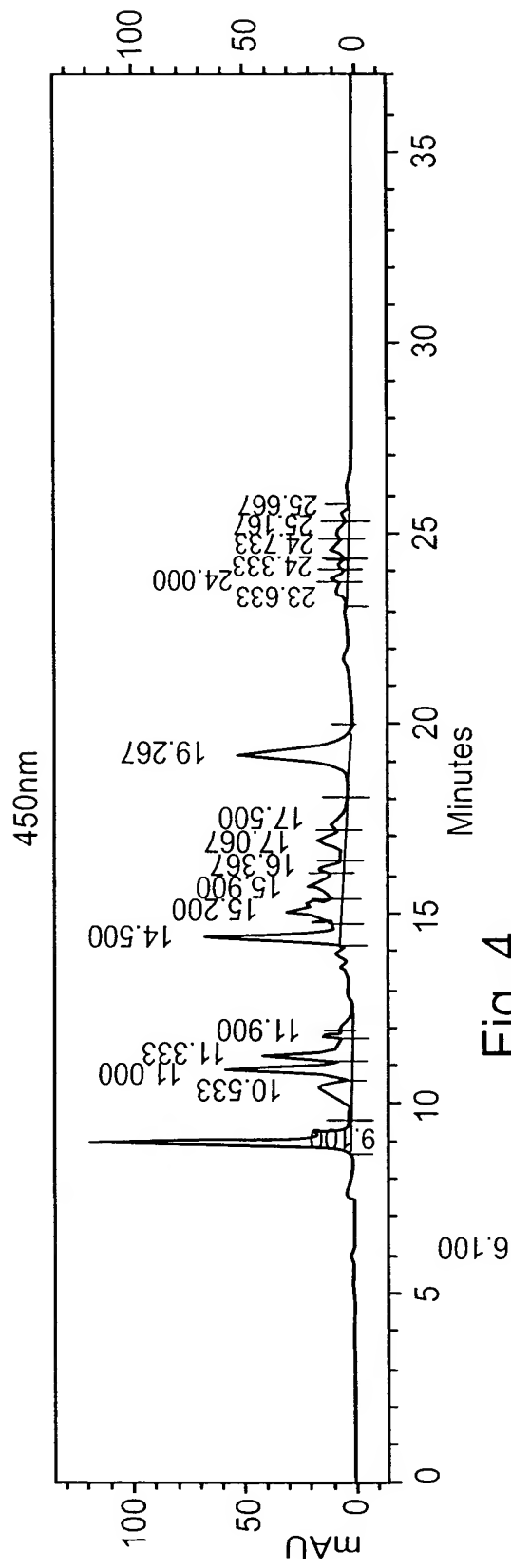


Fig. 4

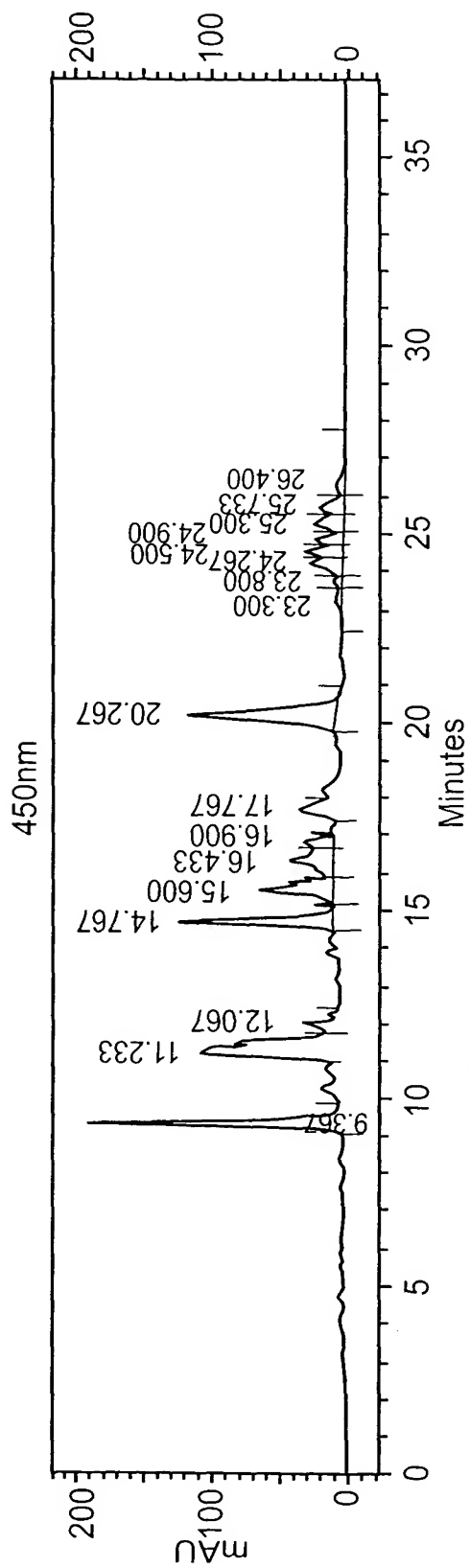


Fig. 5a

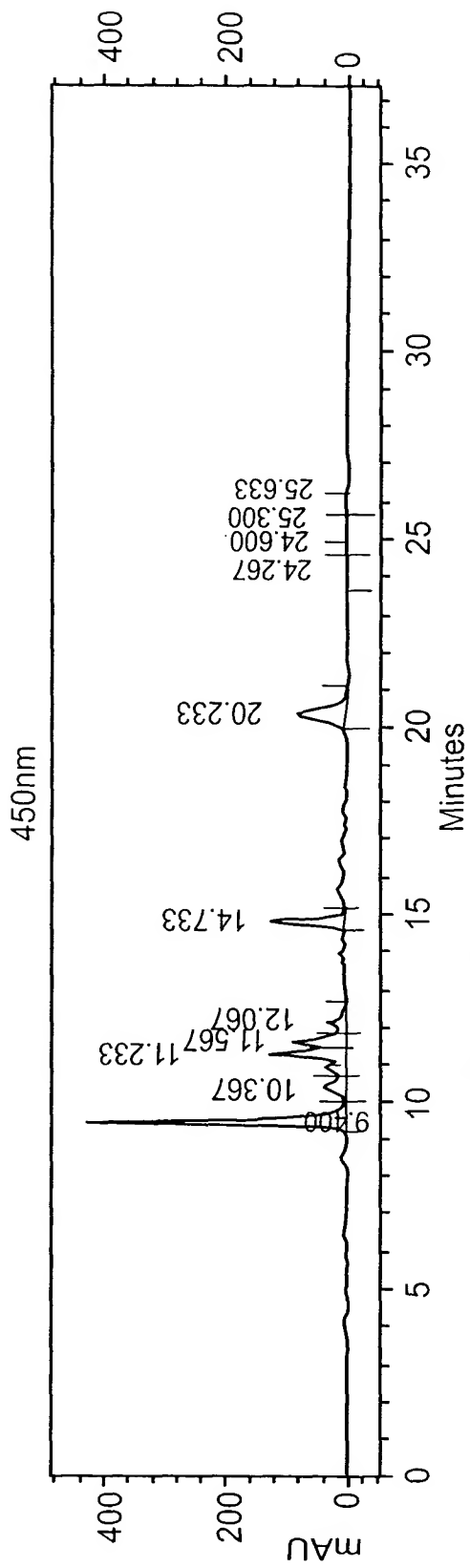


Fig. 5b

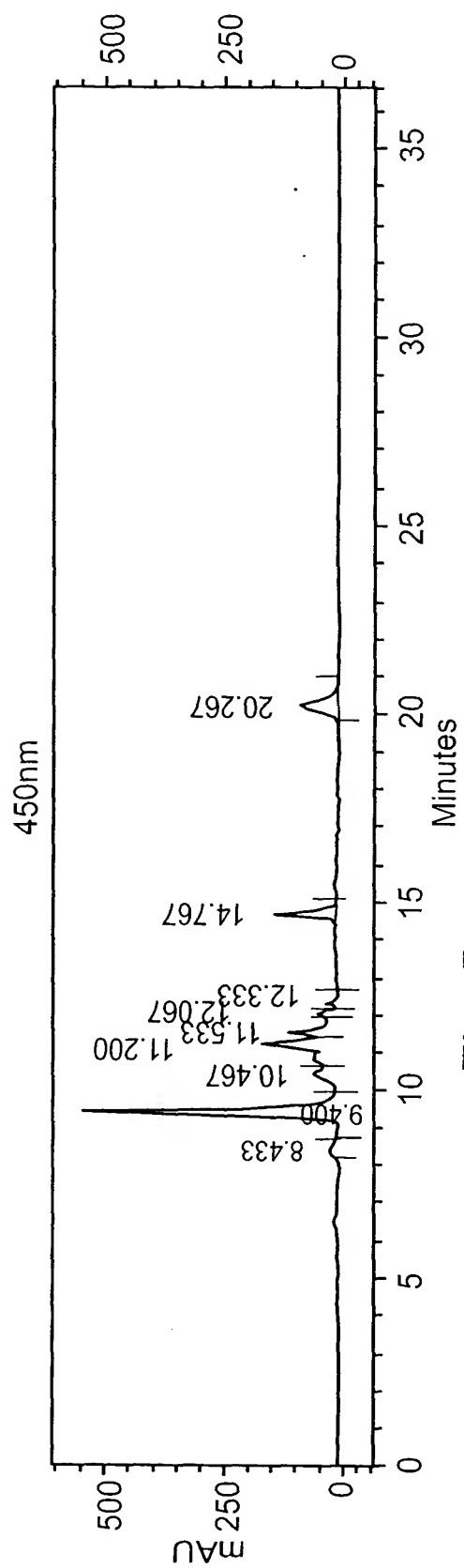


Fig. 5c

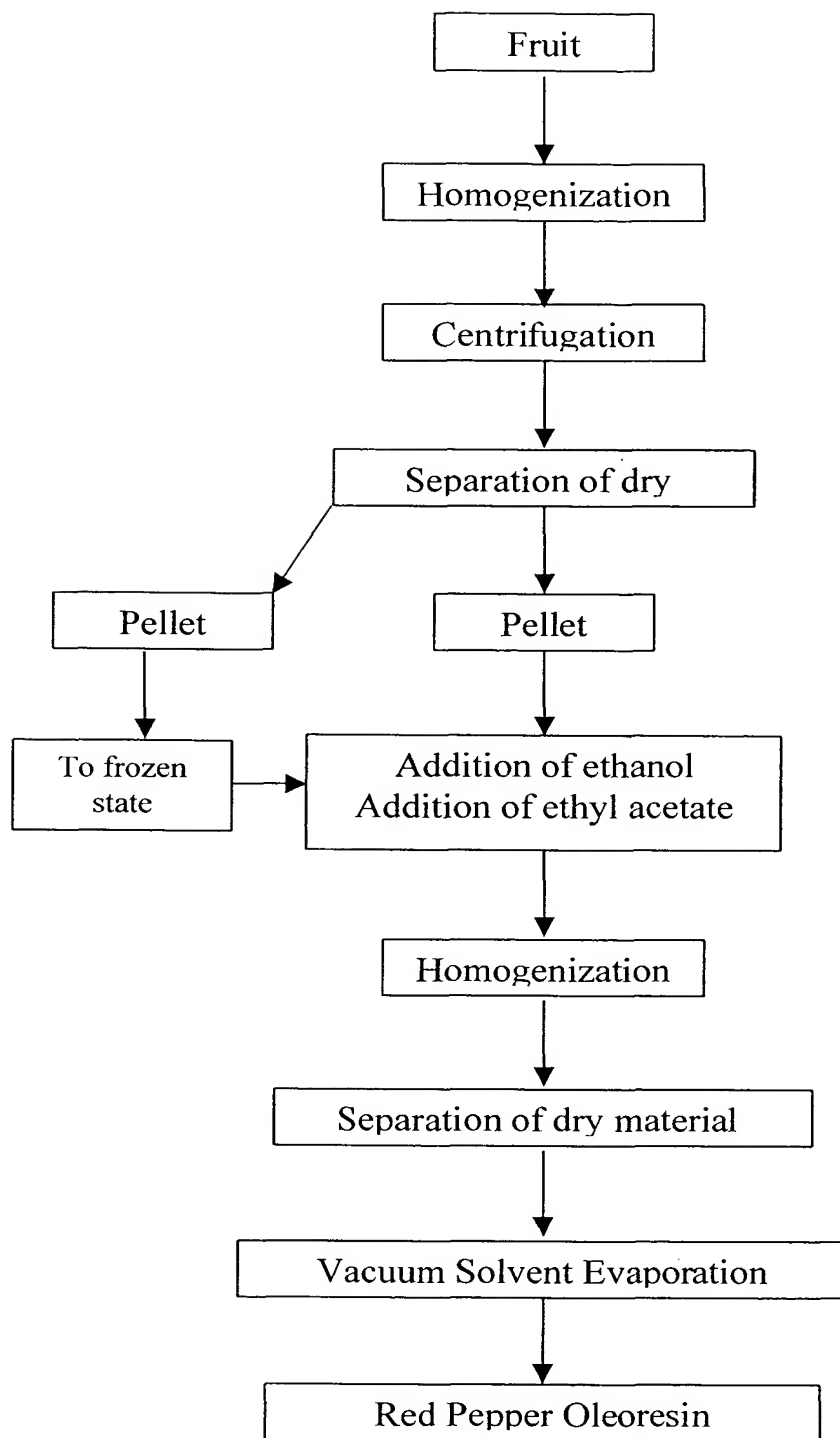


Figure 6

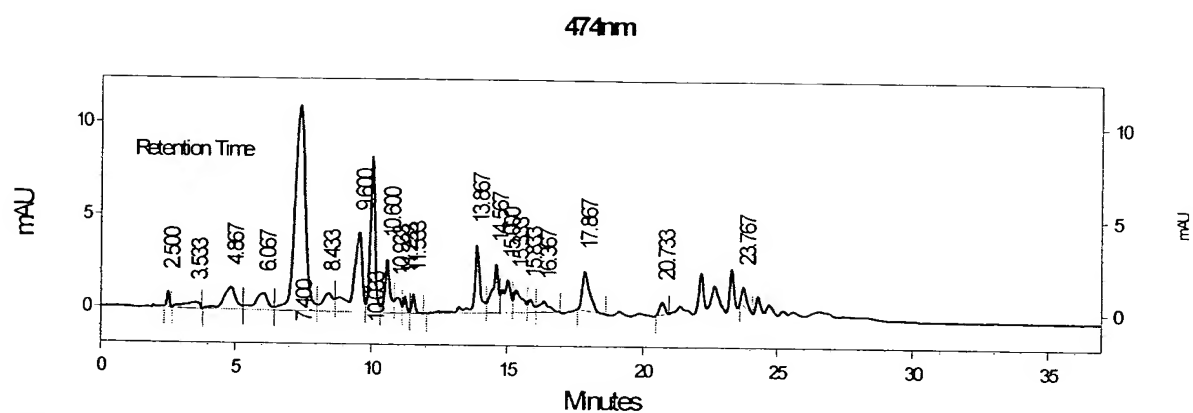


Figure 7a

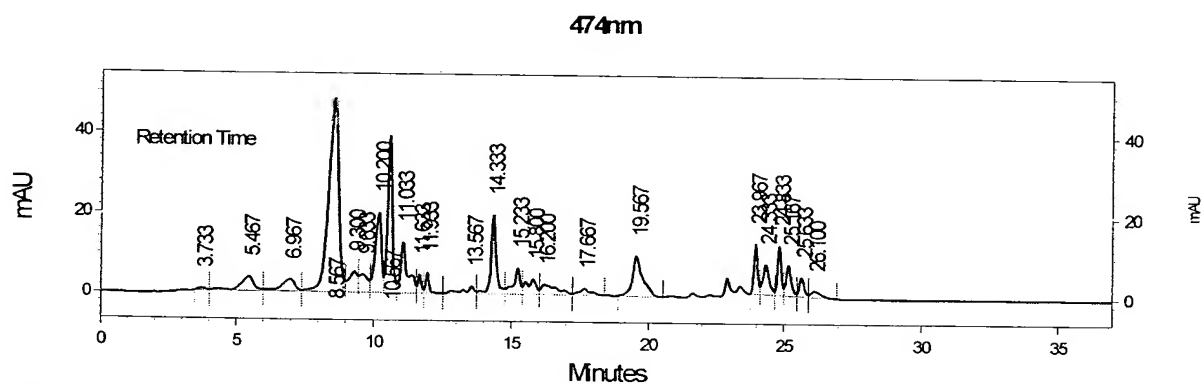


Figure 7b

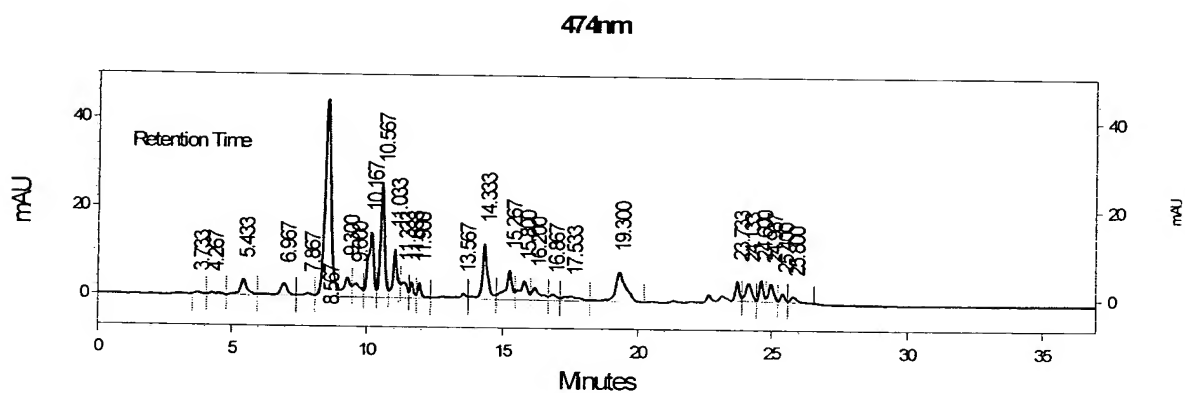


Figure 7c

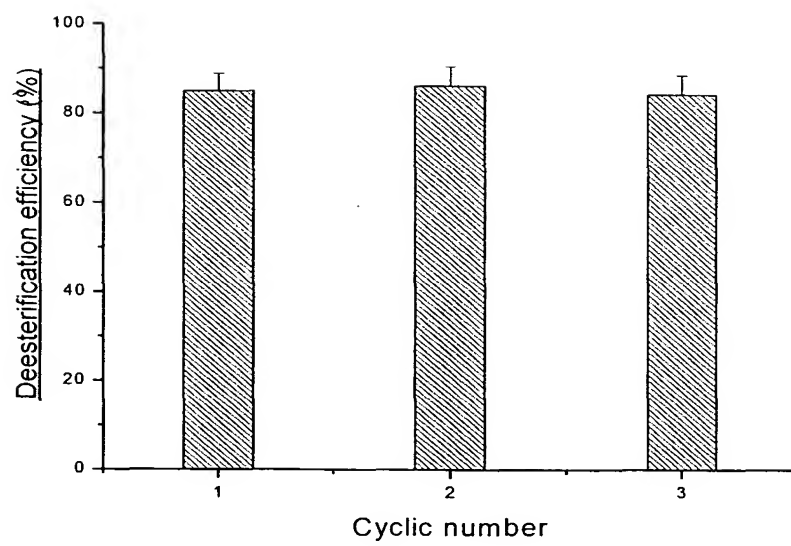


Figure 8

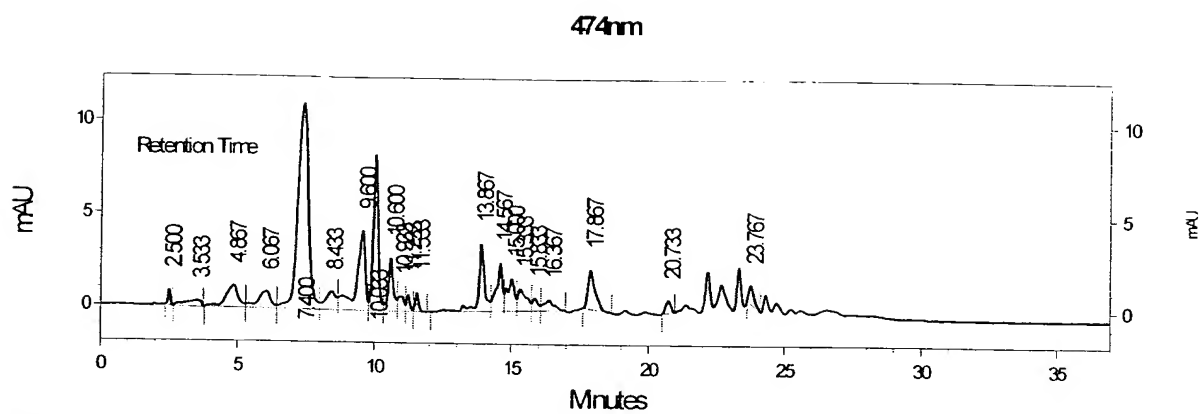


Figure 9a

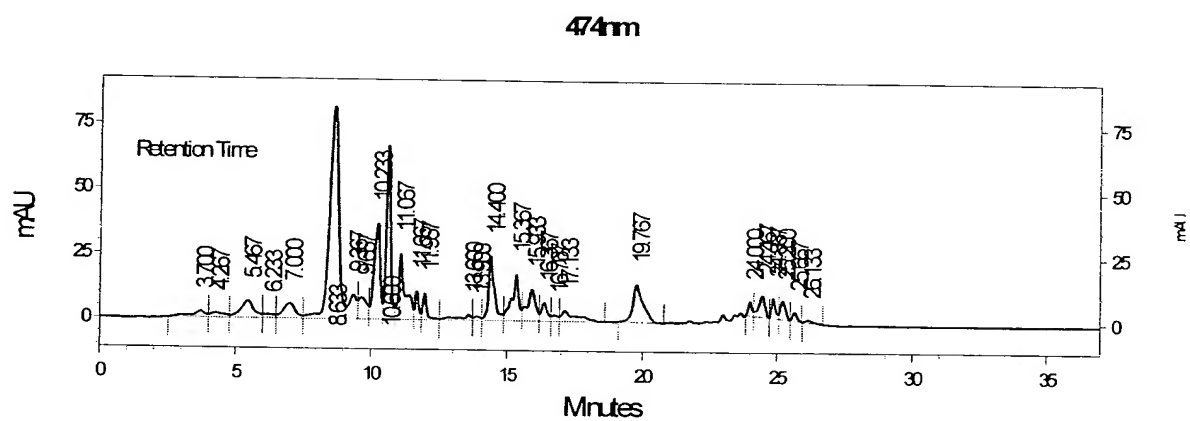


Figure 9b

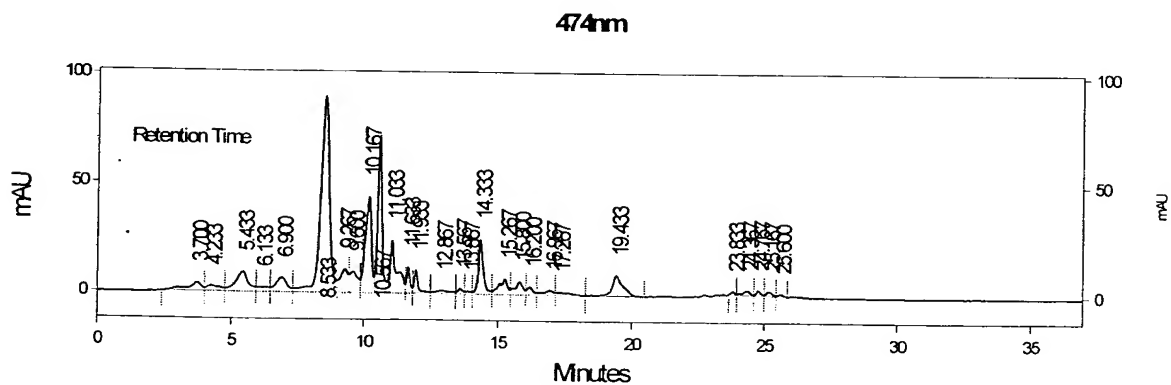


Figure 9c

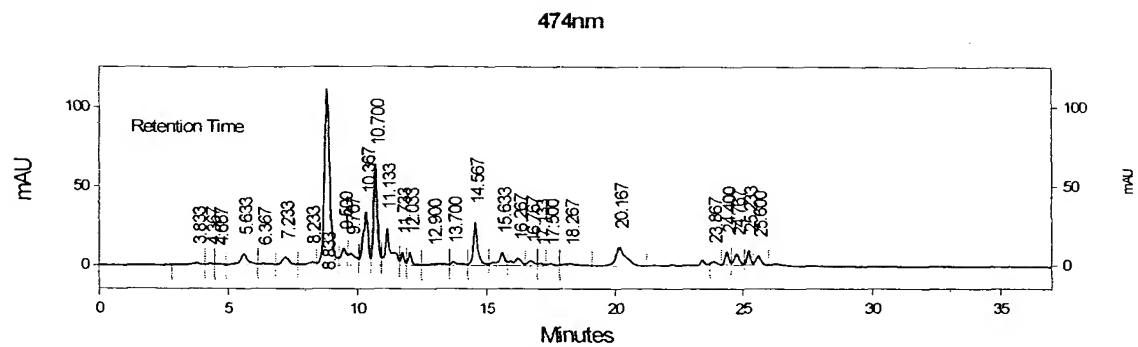


Figure 9d

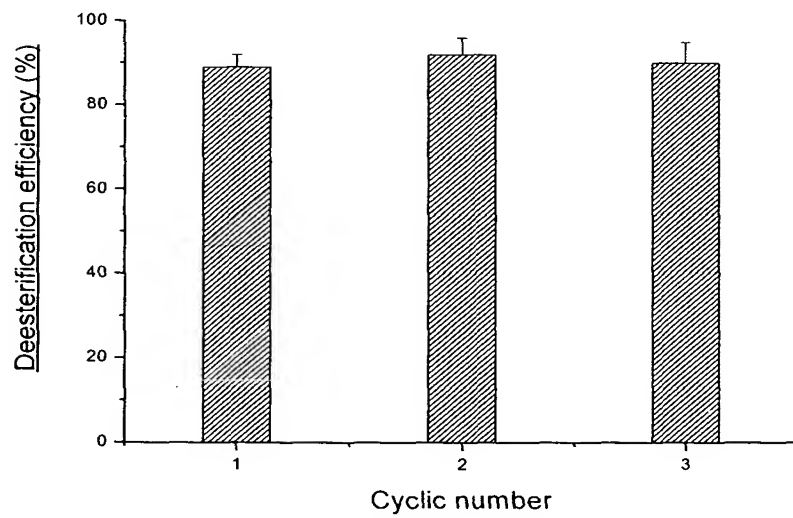


Figure 10

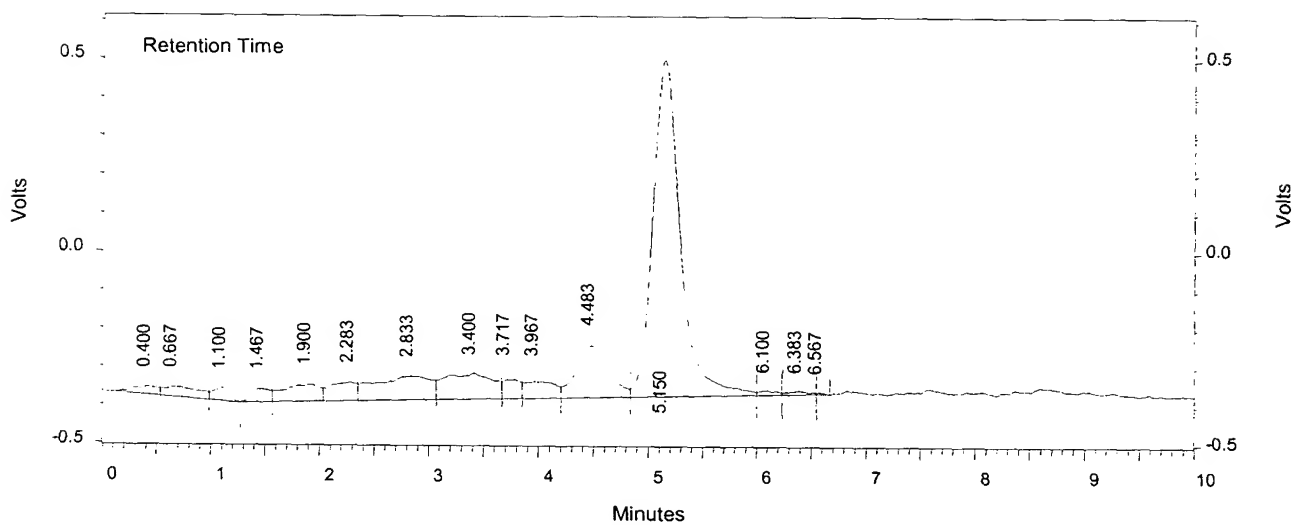


Figure 11a

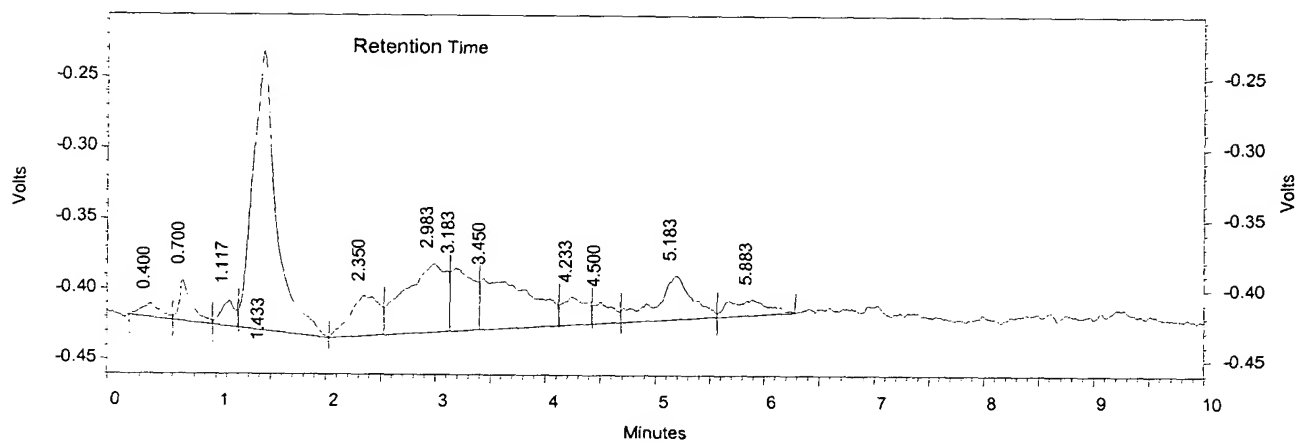


Figure 11b:

DAYS STORAGE

<u>Emulsion</u>	<u>0 days</u>	<u>10 days</u>	<u>20 days</u>	<u>30 days</u>
Deesterified oleoresin 0.15% Tween	1.402	1.377	1.317	1.216
Deesterified oleoresin 0.03% Tween	1.352	1.326	1.206	1.147
Untreated oleoresin 0.15% Tween	1.220	1.159	1.17	1.061
Untreated oleoresin 0.03% Tween	0.912	0.662	0.618	0.621

Note: Values in OD at 474 nm

Figure 12

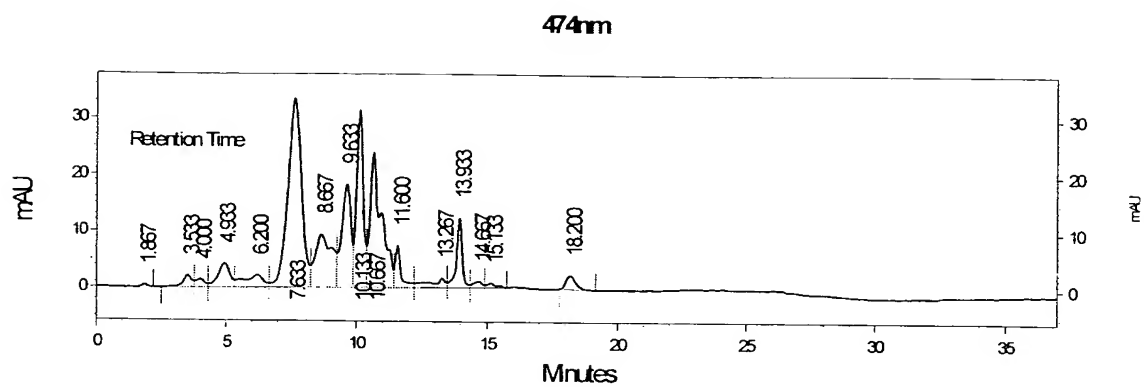


Figure 13a

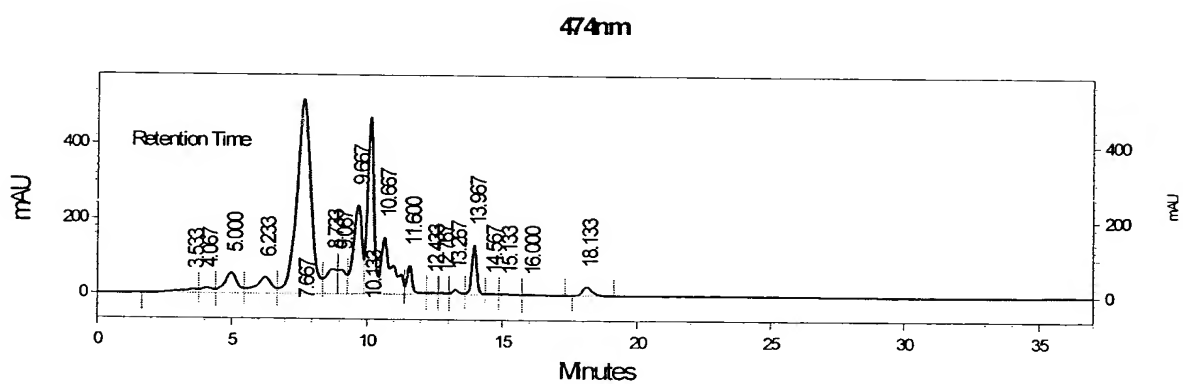


Figure 13b

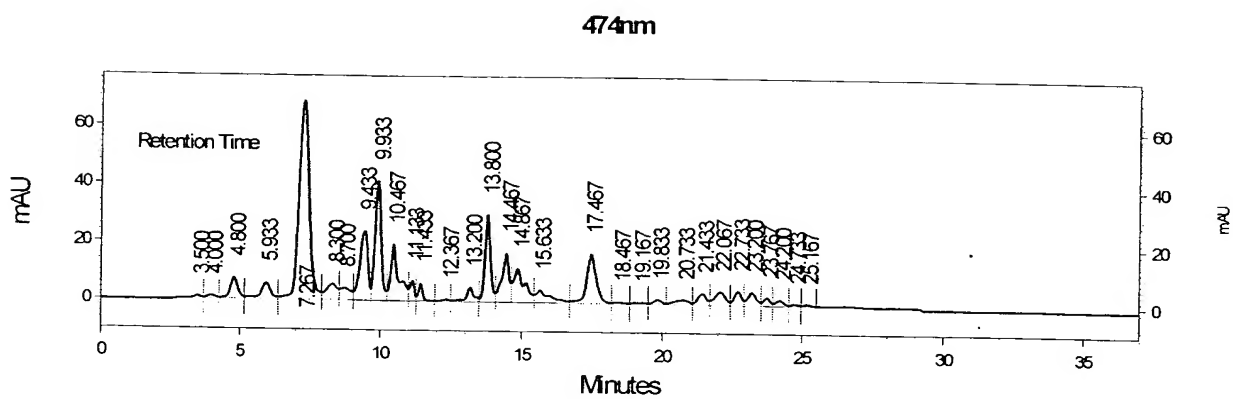


Figure 13c

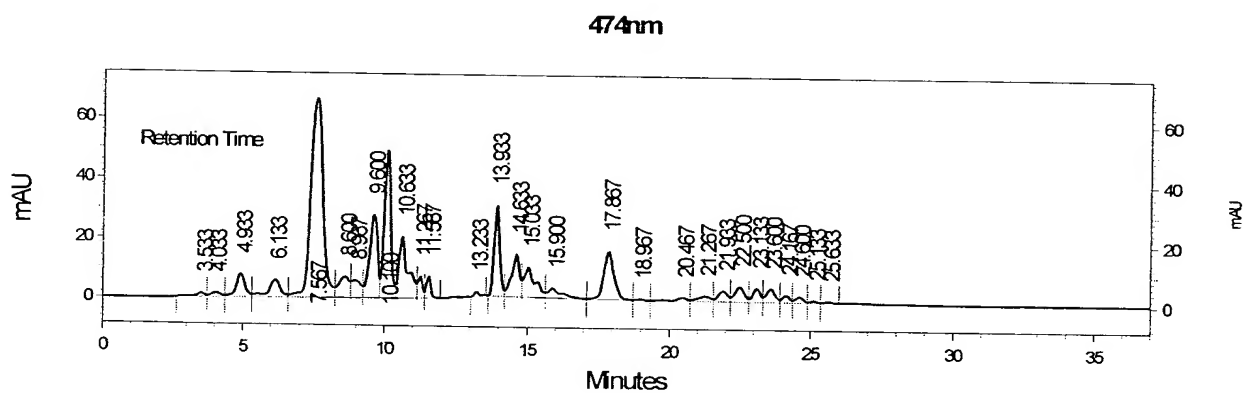


Figure 13d

Figure 14a Extraction of deesterified oleoresin with and without alkaline conditions: Carotenoids, %composition.

CAROTENOID	pH adjusted	Without pH adjustment
Capsorubin	1.22±0.23%	1.08±0.20%
Violaxathin	2.36±0.21%	2.13±0.30%
Capsanthin	42.20±1.30%	38.73±1.10%
Zeaxanthin+ capsolutein	19.33±0.74%	17.62±0.80%
β cryptoxanthin	5.94±0.33%	6.38±0.40%
β carotene	7.97±0.20%	8.50±0.32%
Other Carotenoids	20.98±3.01%	25.56±3.12%

Figure 14b Extraction of deesterified oleoresin with and without alkaline conditions: mg/gram deesterified extract.

<u>Carotenoid</u>	pH adjusted	Without pH adjustment
Capsorubin	2.56±0.48	0.81±0.15
Violaxanthin	4.95±0.44	1.59±0.22
Capsanthin	88.6±2.73	29.00±0.825
Zeaxanthin+ capsolutein	40.59±1.55	13.20±0.60
β cryptoxanthin	12.47±0.69	4.78±0.30
β carotene	16.73±0.42	6.37±0.31
Other Carotenoids	44.00±6.30	19.17±2.34
Total carotenoids	209.9±12.61	74.92±4.74
Enrichment (deesterified/untreated)	2.84 fold (209.9/74 mg/g)	1.01 fold (74.9/74 mg/g)
Vitamin E	20.30	5.00
Enrichment (deesterified/untreated)	3.7 fold (20.3/5.5 mg/g)	0.9 fold (5.0/5.5 mg/g)

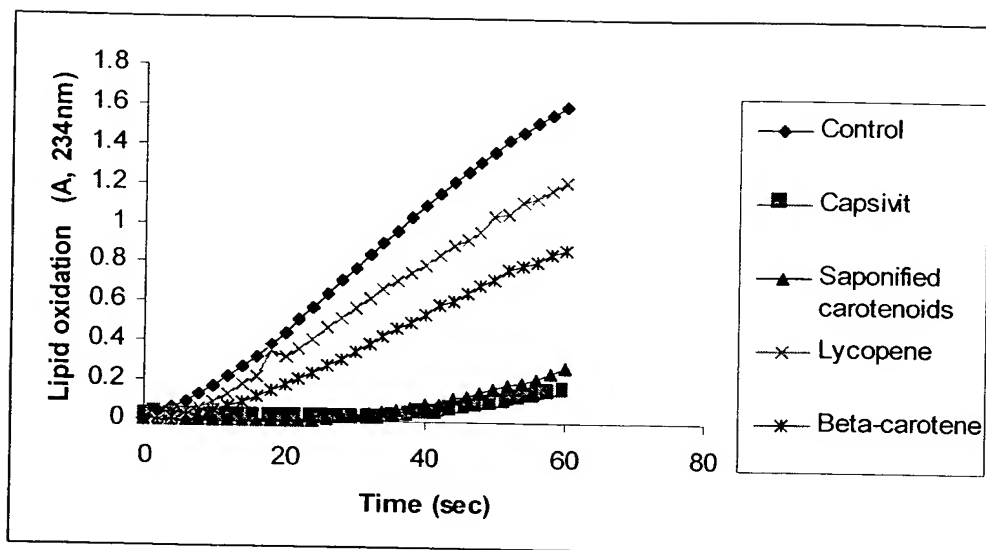


Figure 15a

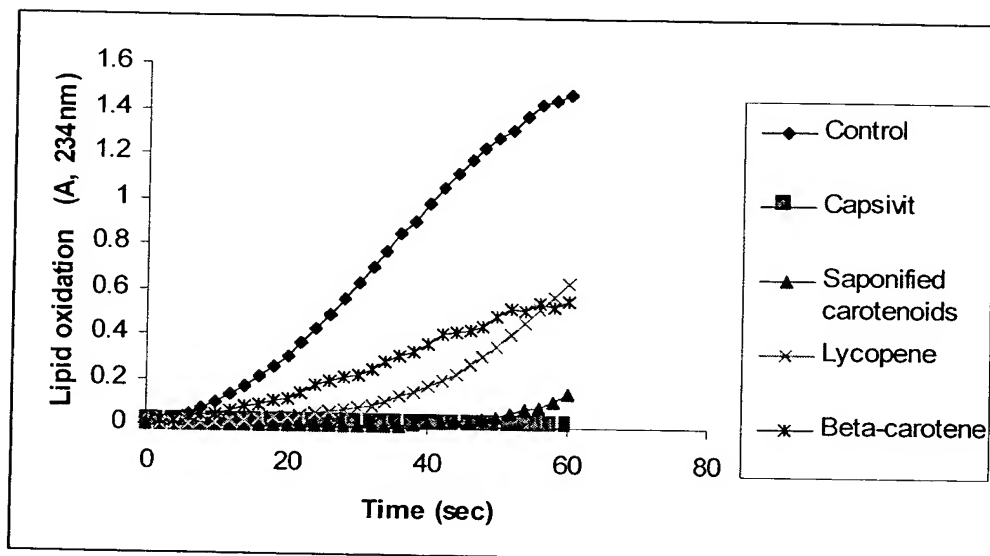


Figure15b

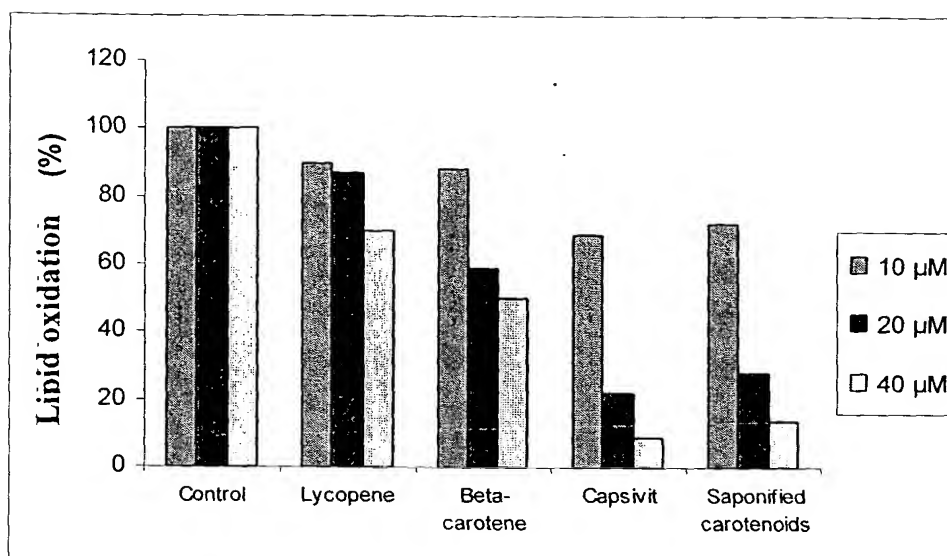


Figure 16a

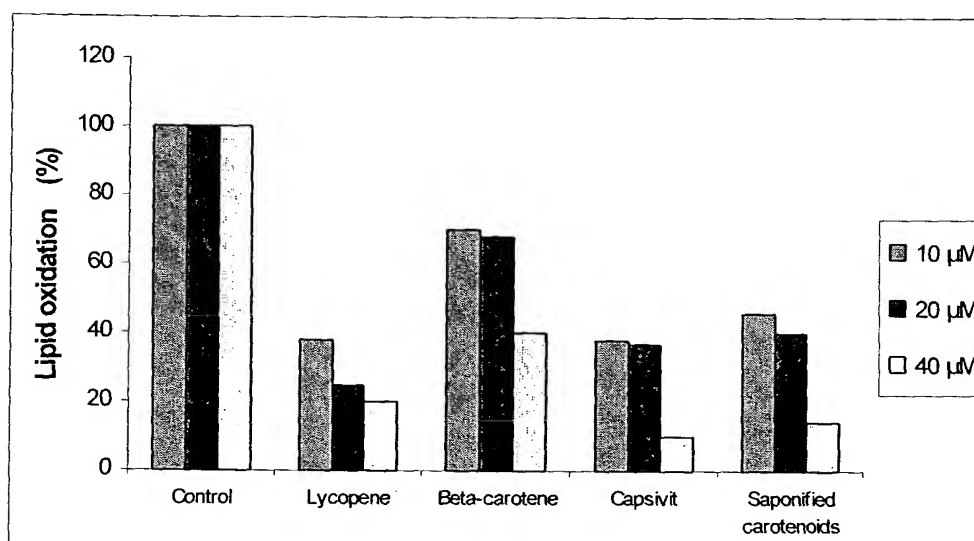


Figure 16b

Figure 17 Enzymatically deesterified carotenoids: %composition (wt/wt):

Component	Without Vitamin E depletion	Vitamin E depletion by Florisil column
Capsorubin	1.22±0.23%	1.68±0.20%
Violaxanthin	2.36±0.21%	2.70±0.30%
Capsanthin	42.20±1.30%	46.00±2.10%
Zeaxanthin+ capsolutein	19.33±0.74%	19.70±0.80%
β cryptoxanthin	5.94±0.33%	5.50±0.40%
β carotene	7.97±0.20%	3.89±0.33%
Other Carotenoids	20.98±3.01%	20.53±4.13%
Total carotenoids	210.00±10.30mg/g	204.00±6.30mg/g
Vitamin E	20.30 mg/g	0.50mg/g